

AKULOV, N.S.; FRANYUK, V.A.

Physical principles of the fatigue of metals. Dokl.AN
BSSR 4 no.2:62-65 F '60. (MIRA 13:6)
(Metals--Fatigue)

PHASE I BOOK EXPLOITATION SOV/5924

Akulov, Nikolay Sergeyevich

Dislokatsii i plastichnost' (Dislocations and Plasticity) Minsk,
Izd-vo AN BSSR, 1961. 107 p. 3300 copies printed.

Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.: N. Siderko.

PURPOSE: This book is intended for physicists and engineers of various fields of specialization and for aspirants and senior students at universities and schools of higher technical education.

COVERAGE: The book presents the theory of plasticity based on two new laws formulated by the author: the kinetics of dislocations and the plastic flow. These laws make it possible
1) to calculate the number of dislocations and the rate of plastic deformation as they depend on the stresses and their duration, 2) to explain various phenomena and to determine

Card 1/1

Dislocations and Plasticity

SOV/5924

those properties of a solid which depend on the number of dislocations. No personalities are mentioned. There are 57 references, mostly Soviet.

TABLE OF CONTENTS:

Introduction	3
Ch. I. Basic Laws of Nonelasticity and Kinetics of Dislocation	5
1. Generation, propagation, and "death" of dislocations	5
2. Basic problems of the theory of plastic flow and kinetics of dislocation	10
3. The law of kinetics of plastic flow	12
4. The law of kinetics of moving dislocations	20
Ch. II. The Theory of Creep	22
1. Basic equations for the first creep stage	22

Card 2/5

S/058/61/000/010/072/100
A001/A101

24.7/100

AUTHORS: Akulov, N.S., Franyuk, V.A.

TITLE: Fatigue destruction of crystals

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 242, abstract 10E85
("Izv. AN BSSR. Ser. fiz.-tekhn. n.", 1961, no. 1, 42 - 46)

TEXT: The authors consider theoretically the effect of great oscillation amplitudes, exceeding the limit of crystal fatigue. It is possible that fixed dislocations are collapsed with formation in their stead of microcracks. Experimental relations are presented which connect the magnitude of applied external stresses with number of cycles at which microcracks arise, as well as changes of microhardness and magnetic induction with number of cycles. There is a good agreement between the form of the indicated relations and theoretical predictions. ✓

V. Rozenberg

[Abstracter's note: Complete translation]

Card 1/1

AKULOV, N.S.

Kinetic theory of dislocations. Inzh.-fiz. zhur. no.2:70-76
F '61. (MIRA 14:4)

1. Fiziko-tekhnicheskiy institut AN BSSR, Minsk.
(Deformations (Mechanics))

S/571/61/000/007/001/010
I048/I248

AUTHORS: Akulov, N.S., Lukhovich, A.A., and Kharitonov, A.I.

TITLE: Shape of the stress-strain curves of metals under variable-sign loads

SOURCE: Akademiya nauk Belaruskay SSR. Fiziko-tekhnicheskiy institut. Sbornik nauchnykh trudov. no. 7. 1961. 9-12

TEXT: Equations for the stress-strain relationship in metals under variable-sign loads are:

$$\sigma = \sigma_0 + (\sigma_m + \sigma_0) [1 - e^{(\beta - \alpha)(\epsilon - \epsilon_0)}] \quad (2)$$

for the creep curve, and

$$\epsilon = b\sigma^2 \quad (5)$$

for the plastic deformation range, where σ is the acting stress, σ_0 is the stress corresponding to the beginning of creep and ϵ_0 is the corresponding deformation, ϵ is the resultant deformation and σ_m is the maximum deformation sic ; b is a constant, α and β

Card 1/3

S/571/61/000/007/001/010
I048/I248

Shape of the stress-strain curves...

ship described by eq.(2) to one described by eq.(5) is caused by plastic deformation. There is 1 figure.

Card 3/3

AKULOV, N.S.; GALKOVSKAYA, M.M.

Creep of metals theory. Sbor. nauch. trud. Fiz.-tekh.inst.
AN BSSR no.7:25-29 '61. (MIRA 15:7)
(Creep of metals)

AKULOV, N.S.

Inelasticity laws and their application. Prim. ul'traakust. k
issl. veshch. no.14:3-10 '61. (MIRA 14:12)
(Plasticity) (Dislocations in crystals)

18-8200
10-9200

88629
S/170/61/004/002/007/018
B019/B060

AUTHOR: Akulov, N. S.

TITLE: Kinetic Theory of Dislocations

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1961, Vol. 4, No. 2,
pp. 70-76

TEXT: The basic concepts of the kinetic theory are the law of plasticity (A) and the equations of dislocation kinetics (B) and (C).

$$\frac{d\varepsilon}{dt} = C_1(\sigma - \sigma_k) U^* + C_2 U \frac{d\sigma}{dt} \quad (A)$$

и уравнения кинетики дислокаций

$$\frac{dU}{d\varepsilon} = a_0 + a_1 U - a_2 U^2, \quad (B)$$

$$\frac{dU^*}{d\varepsilon} = a_0^* + a_1^* U^* - a_2^* U^{*2}. \quad (C)$$

Card 1/4

88629

Kinetic Theory of Dislocations

S/170/61/004/002/007/018

B019/B060

Here, σ denotes the stress, ϵ the plastic deformation, U^* the number of active dislocations, and U the number of passive dislocations. The mobile dislocations are found in energy minima. On a rise of ϵ the passive minima shift out of the minima, and in this case $a_1 > 0$. With growing deformations the barriers become larger due to an increase of inserted dislocations, and in this case $a_1^* < 0$. By solving (B) under these assumptions and substituting in (A) formulas are obtained for creeping and for the strengthening curve, which agree with experimental data. To calculate the physical properties as functions of ϵ it is necessary that the inserted dislocations and microcracks be taken into account. The principal requirement of a kinetic energy of dislocations is that the chain generation and regeneration and other various microflaws be taken into account. As far back as 1947 the author gave an equation to describe the inelasticity by taking account of diffusion of vacancies and mobile dislocations. Formulas given here make it possible to take into account the change in concentration of dislocations and microflaws of different types under a plastic deformation. On a passage of electric current the electron waves are scattered by dislocations and other microflaws, and

Card 2/4

88629

Kinetic Theory of Dislocations

S/170/61/004/002/007/016
B019/B060

on the basis of these facts expressions are given for the ohmic resistance and the coercive power as a function of microflaws. Likewise, a similar expression is obtained for hardness and microhardness. The following relation is obtained for the interaction energy of dislocations:

$E = ax^2/2 - \varepsilon_0(\tau - \tau_1)x + bx^4/4$ (5), where τ_1 and τ denote the corresponding inner and outer elastic stresses. The shift of energy maxima and the correlated shift of dislocations are discussed, and, finally, the calculation of concentration changes of dislocations during a plastic deformation is dealt with. This is done by proceeding from the system

$$\left. \begin{aligned} \frac{dU_1}{d\varepsilon} &= a_0 + a_1U_1U_2 - a_2U_1^2 + a_3U_1U_3 + a_4U_2, \\ \frac{dU_2}{d\varepsilon} &= b_0 + b_1U_1^2 - b_2U_2, \\ \frac{dU_3}{d\varepsilon} &= c_0 + c_1U_2 + c_2U_3. \end{aligned} \right\} \quad (11)$$

Card 3/4

88629

Kinetic Theory of Dislocations

S/170/61/004/002/007/018
B019/B060

where a_0 , b_0 , and c_0 denote the formation rates of different dislocation types in the vicinity of inclusions, etc.

Relation $U_1 = U_m + n_1 e^{-k_1 \epsilon} + n_2 e^{-k_2 \epsilon}$ (17) is obtained for the concentration of dislocations of the i th kind, and the coefficient of internal friction is, like the damping decrement, regarded as being proportional to U_1 : $\delta = \delta_0 U_1$. In accordance with these equations, the damping decrement as a function of ϵ is bound to drop exponentially after passing through a maximum. This dependence is in good agreement with experimental values. There are 1 figure and 3 references: 2 Soviet and 1 US.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN BSSR, g. Minsk (Institute of Physics and Technology of the AS BSSR, Minsk)

SUBMITTED: November 11, 1960

Card 4/4

89929

S/170/61/004/003/008/013
B117/B209

10.9200

AUTHORS: Akulov, N. S., Galenko, P. P.

TITLE: Theory of crystal rigidity in vibrations

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 3, 1961, 98-104

TEXT: On the basis of the kinetic displacement theory established in earlier papers (Refs. 1, 2: Akulov, N. S., DAN BSSR, 3, No. 7, 1959 and Akulov, N.S. i Franyuk, V. A., DAN BSSR, 3, No. 8, 1959), the authors calculated the deviations from Hooke's law in the case of alternating and constant tensions. The deformation of a hollow cylinder during torsion was examined. Alternating tensions give rise to alternating deformations of variable amount (Fig. 1). Equations for the curve of initial deformation as well as for the rising and the falling branch of the hysteresis loop were phenomenologically found earlier (Ref. 3: Akulov, N. S. i Galenko, P. P., DAN SSSR, 103, No. 3, 1955). In the present paper, these formulas are derived on the basis of the displacement theory: (1)

Card 1/5/

89929

S/170/61/004/003/008/013
B117/B209

Theory of crystal ...

$$\left. \begin{aligned} \gamma &= k\tau \pm b\tau^2 + \dots \\ \gamma^+ &= (k + b\tau_a)\tau + (b/2)(\tau^2 - \tau_a^2) + \dots \\ \gamma^- &= (k + b\tau_a)\tau - (b/2)(\tau^2 - \tau_a^2). \end{aligned} \right\}$$

(σ and ϵ are general notations of directions and deformations; in the special case of a displacement $\sigma \equiv \tau$, $\epsilon \equiv \gamma$). The linear term in these equations describes the elastic deformation and the quadratic term the irreversible deformation, i. e., it characterizes the deviations from Hooke's law. The irreversible deformation may be calculated if the distribution function $f(\tau_c, \tau_i)$ is known:

$$(8) \gamma_{\text{irrev.}} = 2\bar{x}_c \int_0^{\tau_a} \int_0^{\tau_c - \tau_a} f(\tau_c, \tau_i) d\tau_c d\tau_i.$$

Plastic deformation leads to a residual deformation, the amount of which is given by the expression (11), $\gamma_{\text{res}} = (b/2)\tau_a^2$, as follows from equation (1), i. e., it amounts to half the total irreversible deformation. During one complete cycle of external tension variation, $\tau_a < \tau < \tau_a$, an hysteresis loop with an

Card 2/5

89929

S/170/61/004/003/008/013
B117/B209

Theory of crystal ...

area equal to the energy losses on heating of metals arises. These losses in the course of a quasi-cycle may be calculated statistically. Every displacement has, during the entire alternating deformation cycle, its own losses which are determined by the elementary rectangular loop (Fig. 1b). In order to calculate the sum of the losses, one has to determine the number of displacements occurring irreversibly during one quasi-cycle. Summing up: It has been shown that the relations (1) may be explained by the statistical displacement theory as established by the authors, which accounts for the possibility of expanding the distribution function in a series. The relations derived correspond to the law of doubling which was formulated for the first time with respect to plastic deformation (Ref. 1). The fundamental theses of the statistical chain displacement theory are in accordance with the known results of the phenomenological theory (Ref. 3). Formulas (9) and (11) show that the residual deformation amounts to half the maximum value of deformation. Fig. 4b shows hysteresis loops for copper samples. With the aid of equation (1) and the curve of initial deformation, one may construct the rear sides of the rising and falling portion of the hysteresis loop on the co-ordinate axes by proper doubling of the scales. Fig. 4a shows a com-

X

Card 3/4

89929

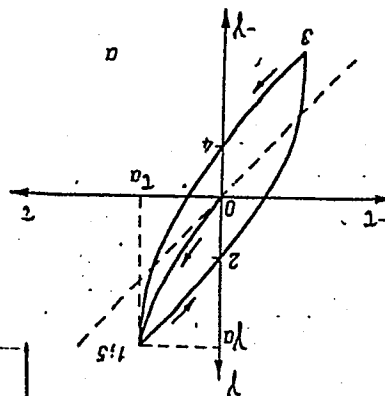
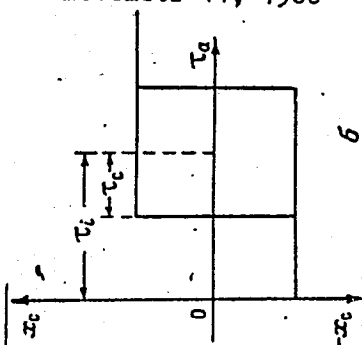
Theory of crystal ...

S/170/61/004/003/008/013
B117/B209

parison between theoretical an experimental curve. Experimental and theoretical points coincide fairly well. Ye. I. Kondorskiy is mentioned. There are 4 figures and 5 references: 4 Soviet-bloc.

ASSOCIATION: Fiziko-tehnicheskiy institut AN BSSR, g. Minsk (Institute of Physics and Technology, AS BSSR, Minsk)

SUBMITTED: November 11, 1960



Card 4/8/

AKULOV, N.S., akademik; GINZBURG, A.S., doktor tekhn.nauk, prof.;
KOSTERIN, S.I., doktor tekhn.nauk, prof.; LYKOV, A.V.,
akademik; POMERANTSEV, A.A., doktor fiziko-matematicheskikh
nauk, prof.; SIROTA, N.N., akademik; SHEVEL'KOV, V.L., doktor
tekhn.nauk, prof.

Aleksandr Savvich Predvoditelev; on his 70th birthday. Inz.-fiz.
zhur. 4 no.12:106-108 D '61. (MIRA 14:11)

1. Akademiya nauk BSSR (for Akulov, Lykov, Sirota).
(Predvoditelev, Aleksandr Savvich, 1891-)

30410

S/058/61/000/009/028/050
A001/A101

24.7500

AUTHOR: Akulov, N.S.

TITLE: Laws of inelasticity and their applications

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 195, abstract 9E107
("Dokl. AN BSSR", 1961, v. 5, no. 2, 52 - 56)

TEXT: The author proposes two equations of inelasticity which relate strain ϵ , stresses σ and their time derivatives to density of dislocations U and $\partial U / \partial \epsilon$ (theoretical derivation and substantiation of equations will be published separately). The equations may be named the laws of inelasticity; because they make it possible to describe, from a unified standpoint, such phenomena as plastic deformation, damping of vibrations, fatigue, absorption of ultrasound, creep, durability. Some of the regularities obtained by means of these equations were found earlier experimentally, some are entirely new. As an example of application of the theory, an expression is presented for the ultrasound damping decrement $\delta = f(\epsilon)$ in the case when Frank-Read sources are blocked. This relationship agrees well with experimental data.

G. Krasko

[Abstracter's note: Complete translation]

Card 1/1

AKULOV, N.S.

On the theory of limits of creep. Dokl. AN BSSR 5 no.3:96-100 Mr.'61.
(MIRA 14:3)

1. Fiziko-tehnicheskiy institut AN BSSR
(Creep of materials)

AKULOV, N.S.

Theory of the diagram of the plastic state. Dokl. AN BSSR 5 no. 4:
146-150 Ap '61. (MIRA 14:5)

1. Laboratoriya fizicheskikh problem Fiziko-tekhnicheskogo instituta
AN BSSR.

(Plasticity)

S/137/62/000/006/109/163
A052/A101

AUTHOR: Akulov, N. S.

TITLE: On the theory of fatigue strength

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 37, abstract 6I222
("Dokl. AN BSSR", v.5, no. 12, 1961, 550)

TEXT: On the basis of the development of previously formulated conceptions about the mechanism of fatigue rupture of metals, the equation for the critical condition of rupture is derived: $(a + b\sigma^m) \times (\sigma - \sigma_0)N = 1$, where a is a constant proportional to the work q_0 (independent of σ) spent for formation of submicro-cracks per each loading cycle; b is a coefficient contained in the equation of rupture work A per N cycles ($A = b\sigma^m N$); $m = 3$; σ is the stress amplitude and σ_0 is the fatigue limit. The above relation is compared with experimental data for armco-Fe, steel and other metals. In the case of steel the relation $1/N - \sigma_0$ (N is the life in cycles) is a linear one. This shows that the work proportional to σ^3 can be neglected in this case. For Ag, Cu and especially for Ni this work plays an important part. The experimental data proved to be in a good agreement

Card 1/2

On the theory of fatigue strength

S/137/62/000/006/109/163
A052/A101

with the theoretical curves. The possibility of a speedier and a more accurate determination of the fatigue limit value of metals is pointed out.

L. Gordiyenko

[Abstracter's note: Complete translation]

✓

Card 2/2

40803

S/250/62/006/009/001/004
1046/1246

24.2200

AUTHORS: Akulov, N. S. and Galenko, P. P.

TITLE: The theory of the rectangular ferromagnetic hysteresis loop

PERIODICAL: Akademiya nauk BSSR. Doklady, v. 6, no. 9, 1962, 551-555

TEXT: The energy Q dissipated along one hysteresis loop and the irreversible magnetization I_{irr} of the ferromagnetic are determined for the distribution function

$$\phi(H_c; H_i) = \phi_0 + c_1 H_i + c_2 H_c + c_3 H_i H_c + c_4 H_i^2 + c_5 H_c^2 + \dots \quad (11)$$

of the ferromagnetic domains with respect to their internal fields H_i and the coercive forces H_c (here ϕ_0 represents uniform distribution in the $(H_c; H_i)$ phase plane). The results

$$Q = \frac{4}{3} \phi_0 I_s H_a^3 + \frac{2}{3} c_2 I_s H_a^4 + \left(\frac{2}{15} c_4 I_s + \frac{2}{5} c_5 I_s \right) H_a^5 \quad (13)$$

$$I_{irr} = \phi_0 I_s H_a^2 + \frac{1}{3} (c_1 + c_2) I_s H_a^3 + \frac{1}{6} \left(\frac{c_3}{2} + c_4 + c_5 \right) I_s + H_a^4, \quad (15)$$

where H_a — the external magnetic field, and I_s — spontaneous magnetization, define the empirical parameters in the phenomenological equations

Card 1/2

The theory of the rectangular ferromagnetic hysteresis loop

S/250/62/006/009/001/004
1046/1246

$$\mathcal{Q} = \frac{4}{3}bH_a^3 + 2a_3H_a^4$$

$$I_{tr} = bH_a^2 + a_3H_a^3$$

(1)

There are 2 figures.

ASSOCIATION: Fiziko-tekhnicheskii institut AN BSSR (Physico-technical Institute, AS BSSR)

SUBMITTED: May 29, 1962

Card 2/2

AKULOV, N.S.

Generalization of the thermodynamics of irreversible processes.
Dokl. AN BSSR 6 no.12:762-765 D '62. (MIRA 16:9)

1. Laboratoriya fizicheskikh problem fiziko-tekhnicheskogo instituta AN BSSR.

AKULOV, N.S.; SHUKEVICH, A.K.

Use of the statistical theory of dislocations in deriving the
fundamental relations for strength curves. Dokl. AN BSSR 7
no.7:453-455 J1 '63. (MIRA 16:10)

1. Fiziko-tehnicheskiy institut AN BSSR.

AKULOV, N.S.; MEL'GUY, M.A.

Electrostriction theory of phase transitions in barium titanate. Dokl. AN BSSR 7 no.10:661-665 0 '63.
(MIRA 16:11)

1. Fiziko-tekhnicheskii institut AN BSSR.

AKULOV, N.S.; KULIK, A.Ya.

Theory of fatigue of metals. Dokl. AN BSSR 7 no.8:528-530
Ag' 1963. (MIRA 16:10)

1. Fiziko-tehnicheskoy institut AN BSSR.

L 3653-66 EWT(d)/EWT(1)/EPA(s)-2/EWP(c)/EWP(v)/I/EWP(k)/EWP(1)/ETC(m) IJP(c)
ACCESSION NR: AP5024148 WW/CG UR/0250/65/009/009/0581/0584 42
AUTHOR: Mel'guy, M. A.; Akulov, N. S. 38
TITLE: The theory of hysteresis phenomena in ferroelectrics 23
SOURCE: AN BSSR. Doklady, v. 9, no. 9, 1965, 581-584 21,44,55
TOPIC TAGS: hysteresis loop, Gaussian distribution, ferroelectric crystal, statistical analysis
ABSTRACT: In some cases it is advantageous to consider hysteresis phenomena simply in a statistical way, without posing the question of their physical bases but concentrating on the important fact that the superposition of different factors leads to a divergence of the magnitude of the coercive force from the mean value. In these cases it is necessary to introduce a distribution function. Preisach has shown that for a theoretical explanation of the hysteresis loop it is necessary to consider the distribution function for internal fields. To this end, he introduced a Gaussian distribution function. However, a Gaussian distribution function which describes the processes in a general form brings about difficulties in inter-
Card 1/2

L 3653-66

ACCESSION NR: AP5024148

4
gration and in obtaining generalized analytical expressions. The present article is an attempt to extend the Preisach-Akulov statistical method to weak, medium and strong fields. A mathematical treatment of the subject results in an expression for the desired values. However, the coefficients in the function may depend on the material, the temperature, the pressure, and other factors. Orig. art. has: 18 formulas and 1 figure

ASSOCIATION: Otdel fiziki nerazrushayushchego kontrolya AN BSSR (Department of the Physics of Nondestructive Testing of the AN BSSR) 44.55

SUBMITTED: 11Mar65

ENCL: 00

SUB CODE: SS, EM, MA

NR REF SOV: 005

OTHER: 001

PC
Card 2/2

L 23466-66 EWT(1) IJP(c) 00

ACC NR: AP6013981

SOURCE CODE: UR/0201/65/000/001/0104/0107

AUTHOR: Akulov, N. S.

ORG: none

TITLE: Theory of magnetization curves and magnetostriction of ferrites

SOURCE: AN BSSR. Vestsi. Seryya fizika-tekhnichnykh navuk, no. 1, 1965, 104-107

TOPIC TAGS: magnetization, ferrite, ferromagnetism, magnetostriction, magnetic dipole, temperature dependence

ABSTRACT: The connection between the magnetic and mechanical states of ferromagnets is very important in contemporary ferromagnetism theory, due to the effect of spontaneous magnetostriction. A new fact has been recently revealed: in some ferromagnets, different sub-lattices may have magnetization of different magnitudes and directions. This makes it necessary to express λ in terms of I_M for a projection of the Z axis. This problem is solved on the basis of magnetic dipole interactions. It is shown that the anisotropy law for even effects is universal for ferro- and ferri-magnets under the given conditions. The temperature dependence of spontaneous magnetization and magnetostriction is investigated. The author suggests a new concept of critical points, involving a transition from real to complex numbers. In essence, in order to determine χ and I_B , A_1 and A_2 are found. A_1 is found by solving a linear problem in consideration of the possibility of appearance of complex equations of the type $A_1=0$. Once A is found, it is possible to find the root of the equation $A_1=0$. Expressing the root as θ_1 , the author derives the equation

Card 1/2

46
B

2

L 23466-66

ACC NR: AP6013981

$$A_1 = A_0 (\theta_1 - T)(\theta_2 - T)(\theta_3 - T) \dots (\theta_n - T)$$

Then use is made of the fact that the other quantities, such as A_3 and λ_B , which are not functions of A_1 will not vanish as $T \rightarrow \theta_1$. Therefore, in a small temperature interval near $T = \theta_1$, A_1^{-1} changes very rapidly, and A_3, λ_B , and analogous quantities can be looked upon as constants. Experimentally produced temperature coefficients for these quantities can be introduced to increase the accuracy of the work. Orig. art. has: 3 figures and 17 formulas. [JPAS]

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 001

Card

2/2 90

L 30781-66 EWP(c)/EWP(k)/EWT(d)/EWT(m)/T/EWP(1)/EWP(v) IJP(c)

ACC NR: AP6022125

SOURCE CODE: UR/0250/66/010/003/0151/0155

AUTHOR: Akulov, N. S.

ORG: Division of Physics of Nondestructive Testing, AN BSSR (Otdel fiziki neraz-rushayushchego kontrolya AN BSSR)

TITLE: Theory of elementary particles

SOURCE: AN BSSR. Doklady, v. 10, no. 3, 1966, 151-155

TOPIC TAGS: nuclear model, elementary particle, lepton, baryon, muon, nuclear spin, quantum number, charged particle

ABSTRACT: The author proceeds from the following model: a system consisting of a particle revolving about a center (kernel) along an orbit with a diameter on the order of 10^{-13} may exist in various states characterized by quantum numbers — spin ($S = 0, \pm 1/2$), lepton ($L = 0, \pm 1$), "charge" ($\lambda = 0, \pm 1$) (in units of proton charge), "muon" ($m = 0, \pm 1$), baryon ($B = 0, \pm 1$). Such a model corresponds to leptons when $B = 0$. When $B = 1$, however, there appear special particles — "rheons" — for which the system of quantum numbers is the same as that of leptons. These rheons i.e., fundamental particles with integer-valued charge actually exist. Owing to the interpenetration between lepton "clouds" (in neighboring rheons) they behave within baryons like particles with the fractional charges $+2/3$ and $-1/3$, but the products of the decay cannot have any fractional charge. On this basis, and based on the

Card 1/2

0015

0038

E 30781-66

ACC NR: AP6022125

principle that all particles differ from each other by the composition of their quantum numbers, a classification of the structures of all elementary particles is presented. Orig. art. has: 1 figure, 3 tables, 5 formulas. Orig. art. has: 1 figure, 5 formulas and 3 tables. [JPRS]

SUB CODE: 20 / SUBM DATE: 26Jan66

Card 2/2

JS

L 07225-67 EWP(c)/EWP(k)/EWT(d)/EWT(m)/EWP(l)/EWP(v)/EWP(t)/ETI LOP(C) SD/HW
ACC NR: AP6029647 SOURCE CODE: UR/0250/66/010/008/0546/0549

AUTHOR: Akulov, N. S.; Galenko, P. P.

ORG: Department of Physics of Nondestructive Inspection, AN BSSR
(Otdel fiziki nerazrushayushogo kontrolya AN BSSR)

TITLE: On the theory of plastic hysteresis

SOURCE: AN BSSR. Doklady, v. 10, no. 8, 1966, 546-549

TOPIC TAGS: nondestructive test, hysteresis loop, stress distribution

ABSTRACT: The dislocation theory of plastic hysteresis previously developed by the authors and others makes it possible to compute the course of deformation-and-voltage curves in both initial loading and for the ascending and descending hysteresis loops. There is a very interesting phenomenon consisting in a decrease in width of hysteresis loop as the number of cycles increases, and loop width stabilizes at a great number of cycles, but begins to break down as cycles are increased. The aim of this work is to give a numerical analysis of this phenomenon. The theory of periodic movement of dislocations in forward and reverse directions under loads of variable sign is based on the statistical function of distribution of internal stresses σ_i which may differ in degree and sign. Therefore they can strengthen or attenuate the effect of elastic stresses, and vary from zero to shear stress σ_k , but with external stress amplitude $\sigma_m \ll \sigma_k$ equiprobable distribution of dislocations in accordance with internal elastic

Card 1/2

L 07225-67

ACC NR: AP6029647

stresses may be assumed. The authors developed this theory further for different stress ratios. To test their conclusions they conducted a study of plastic hysteresis in multiple repeated cyclic torsion deformations of technically pure nickel specimens. As the number of cycles increases, the hysteresis loop width decreases. The experimental value of the plastic hysteresis loop under coercive force is in good agreement with the theoretical curve. Orig. art. has: 11 formulas and 2 figures.

SUB CODE: 20/ SUBM DATE: 15Apr66/ ORIG REF: 006

nd
Card 2/2

ACC NR: AP6033156

SOURCE CODE: UR/0250/66/010/009/0632/0635

AUTHOR: Akulov, N. S. (Academician AN BSSR); Lukhovich, A. A.

ORG: Division of the Physics of Nondestructive Control AN BSSR (Otdel fiziki nerazrushayushchego kontrolya AN BSSR)

TITLE: Thermal electromotive force induced by plastic deformation

SOURCE: AN BSSR. Doklady, v. 10, no. 9, 1966, 632-635

TOPIC TAGS: *thermal* ~~thermo~~electromotive force, metal deformation, plastic deformation, ~~deformation induced thermoelectromotive force, thermoelectromotive force calculation~~
crystal lattice distortion

ABSTRACT: The fundamental theory of thermal emf changes induced by plastic deformation of metal in tension has been investigated. Also, formulas for expressing the relationship between the degree of metal deformation and the induced thermal emf have been derived, taking into account the dislocations and vacancies formed with plastic deformation, as well as the lattice elastic distortions and the electron density changes associated with them. Experimental verification of the derived formulas was done by subjecting 99.99%-pure copper to tension and measuring the changes in the induced thermal emf with an accuracy of 0.01 $\mu\text{V}/\text{mm}$. By applying the statistical theory of dislocations for quantitative evaluation of thermal emf induced by plastic deformation, a good quantitative agreement between the theoretical and experimental data was obtained. Thermal emf changes are determined mainly by an

Card 1/2

SOV/99-59-8-5/10

30(1)

AUTHOR:

~~Alkulov, N.V.~~ Engineer, Hydrologist (Frunze)

TITLE:

Gravity Water Supplying of Mountain Pastures of Kenes-Anrahay (Kirgiz SSR) from Wells

PERIODICAL:

Gidrotekhnika i melioratsiya, 1959, Nr 8, pp 30-33 (USSR)

ABSTRACT:

The wells of the mountainous regions of Kirgizia are often built on slopes. The experiments to channel running water over a distance of 150 meters away from these wells were successful in Kenes-Anrakhay. A drawing illustrates the well and the pipes carrying the water. This running water system was invented by the author and was implemented by Engineers P.P. Barynov and V.I. Ignatov in 1957. At present 24 such installations serve as winter watering places for mountain animals. This installation can also be used for already existing wells. By means of a drawing (Fig.4) the drainage, a possible water storage basin and the watering places are illustrated. In the summer the water can be used for irrigation. This water system should be applied on a large scale. It is necessary to prepare designs of standard types and to produce the construction elements. There are 2 dia-

Card 1/2

SOV/99-59-8-5/10

Gravity Water Supplying of Mountain Pastures of Kenes-Anrahay (Kirgiz SSR) from Wells

grams and 2 photographs.

Card 2/2

AKULOV, N.Y.

Syphon water-intaking device for drill holes. Razved. 1 okh. nedr.
26 no.10:42-44 0 '60. (MIRA 13:11)

1. Kirgizskoye geolupravleniye.
(Irrigation)

KOSTYUNIN, I.K.; AKULOV, P.V.; YURKINA, N.K.; CHERNYI, I.I.

Causes of the rupture of the upper transversal anchor bolts of coke
ovens. Koks i khim. no.6:21-23 '63. (MIRA 16:9)

1. Chelyabinskiy metallurgicheskiy zavod.
(Coke ovens) (Metals—Analysis)

DOBROVOL'SKIY, I.P.; USTUPNYI, V.A.; AKULOV, P.V.; PRAVDIN, V.N.

Modification of the spraying system for coke quenching. Koks
i khim. no.12:25-27 '63. (MIRA 17:1)

1. Chelyabinskiy metallurgicheskiy zavod.

AKULOV, S. I.

"The Exchange of the Basal Energy Metabolism in Specific Amounts of Physical Work under Influence of the Preparation of 'Cola'", Farmakol. i Toksikol., 5, No. 4, 1942.

(Lab. Labor Physiology, NthAir Base)

AKULOV, V., podpolkovnik

Cadets must have skill in educational work. Voen. vest. 41 no.3:
67-68 Mr '62. (MIRA 15:4)

(Russia—Army—Officers)

AKULOV, V.D.; UGAY, L.P.

Diagnosis of congenital cysts of the lung in early childhood. Sov.
zdrav. Kir. no.2:62-63 Mr-Apr '62. (MIRA 15:5)

1. Iz detskogo otdeleniya (ispolnyayushchiy obyazannosti zaveduyushchego -
B.L.Kibrik) i patomorfologicheskoy laboratorii (zav. - kand.med.nauk
S.Kh.Khamitov) Kirgizskogo nauchno-issledovatel'skogo instituta
tuberkuleza.

(LUNGS--TUMORS)

(CYSTS)

AKULOV V.D.

Adenomatosis of the lungs in man. Sov.zdrav.Kir. no.5:57-59 S-0
'62. (MIRA 15:10)

1. Iz Kirgizskogo nauchno-issledovatel'skogo instituta tuberkuleza
(dir. - prof. Yu.A.Volokh).
(LUNGS—TUMORS)

KALOSHIN, V.A.; AKULOV, V.G.

Case of bilateral agenesis of the carotid sinus canal of the
temporal bone. Arkh.anat.gist. 1 embr. 37 no.7:93-94 J1 '59.
(MIRA 12:10)

1. Kafedra normal'noy anatomii (zav. - prof.Z.I.Ibragimova)
Vitebskogo meditsinskogo instituta i kafedra fiziologii (zav. -
dotsent M.K.Bosyy) Cherkasskogo pediatricheskogo instituta.
Adres avtorov: g.Cherkassy (obl.), Pedagogicheskiy in-t, kafedra
fiziologii Cheloveka.

(TEMPORAL BONE, abnormalities)

S/035/62/000/001/038/038
A001/A101

AUTHOR: Akulov, V.I.

TITLE: Criteria of application of simplified adjustment of polygonometric traverses

PERIODICAL: Referativnyy zhurnal. Astronomiya i-Geodeziya, no. 1, 1962, 31, abstract 10215 ("Izv. Vyssh. uchebn. zavedeniy. Gorn. zh.", 1961, no. 6, 49 - 56)

TEXT: The author proposes criteria for determining the feasibility of applying a simplified method for adjustment of polygonometric traverses, in dependence on the form of the traverse and direction φ of linear misclosure. It is stated that the rigorous adjustment of a polygonometric traverse can be replaced, with an accuracy sufficient for practical purposes, by a simplified one, provided that the following conditions are fulfilled: ✓

$$0.8 A < \frac{M_s^2}{M^2} < 1.2 A \text{ (at } M_s < M \beta \text{),}$$

Card 1/2

44623
S/135/63/000/001/006/016
A006/A101

AUTHORS: Supereko, O. D., Akulov, V. I., Engineers

TITLE: Semi-automatic welding in carbon dioxide at the Chelyabinsk tractor plant

PERIODICAL: Svarochnoye proizvodstvo, no. 1, 1963, 16 - 19

TEXT: Information is given on the assimilation of welding in CO₂ for tractor parts at the Chelyabinsk tractor plant. For this purpose the equipment employed has been redesigned and improved. In the A-547p (A-547r) semi-automatic machine the copper nozzle has been replaced by a ceramic nozzle and a mechanical gas valve has been mounted into the machine. The following improvements have been brought about in the design of the A-537 semi-automatic welding machine: use of a ПШ-5 (PSh-5) type feed mechanism; mounting of a special button on the feed mechanism, preparing the machine for operation and assuring its operation during idle run; redesigning of the gas valve; redesigning of the holder (Figure 1). The gas supply to the welding machines has been centralized. Copper welding wire is now being refined in a special device where the

Card 1/2

Semi-automatic welding in...

S/135/63/000/001/006/016

A006/A101

wire is drawn through a container with a set of abrasive disks. The tests proved the possibility of using the semi-automatic method for welding frames of tractor carriages in CO_2 with 2 mm wire. The weld leg was reduced by 25 - 30% (7 - 8 mm against 9 - 10 mm in manual welding). This method reduced the consumption of welding materials and electric power and increased considerably the labor efficiency. There are 5 figures and 3 tables.

Figure 1. A holder for semi-automatic welding in CO_2 in the A-537 machine

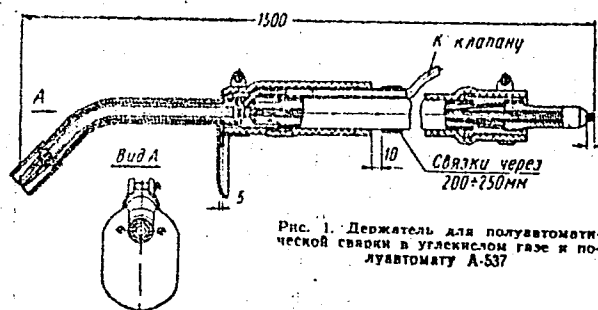


Рис. 1. Держатель для полуавтоматической сварки в углекислом газе к полуавтомату А-537

Card 2/2

AKULOV, V. I.

AUTHOR: Akulov, V.I.

6-58-4-3/18

TITLE: Calculation and Determination of the Accuracy of a Theodolite Traverse Based on Two Bench Marks Where the Adjacent Angles Were Not Measured (Vychisleniye i otsenka tochnosti teodolitnogo khoda, opirayushchegosya na dva tverdykh punkta, na kotorykh ne izmereny primychnyye ugly)

PERIODICAL: Geodeziya i Kartografiya, 1958, Nr 4, pp. 15-22 (USSR)

ABSTRACT: First it is shown that the formulae usually used in this case (1) and (2) can be used for the calculation of theodolite lines of sight based on a control station and an accurately determined direction, but that they cannot be used for such as are based upon two control points without a measured angle of connection. For the latter case an additional investigation is carried out. In each of the measured lines, if all angles and sides were measured, there exists an element (side or angle) the measuring of which was superfluous. Therefore the angles of elevation of all sides and the coordinates of all peaks of such a theodolite line can be calculated also if the length of any one of the sides or the amount of one of the angles is not known. The element, the measuring of which was superfluous,

Card 1/4

Calculation and Determination of the Accuracy of a Theodolite Traverse Based on Two Bench Marks Where the Adjacent Angles Were Not Measured 6-58-4-3/18

is then used for the control of all other elements. A side with the number "k" is assumed to be an element unnecessarily measured, i.e. the calculation of a theodolite line is investigated which is based upon 2 control points, in which case the enclosing angles at these points and the length of the side "k" are not known. First the angle of direction of the first side A-1 is determined, and the equations (3) and (4) are written down. From these equations the equations (5) and (7) are obtained, with the aid of which the angle of direction of the first side of the line can be determined if one of the sides of the line has not yet been measured. The angles of direction of the remaining sides are calculated according to (9). The average square of deflection of the angle of direction of the i-th side (without taking the errors at the control points into account) is calculated according to the equation (12). An extended equilateral theodolite line is then investigated. From formula (14b) it follows that in the case of an extended equilateral theodolite line based upon 2 control stations 1.) the errors of the angles of elevation are equal to one another in the case of sides located at equal distances from the control

Card 2/4

Calculation and Determination of the Accuracy of a Theodolite 6-58-4-3/18
Traverse Based on Two Bench Marks Where the Adjacent Angles
Were Not Measured

points, 2.) the errors of the angle of elevation diminish with an increase of distance from the control points; the greatest error is found with the angles of elevation of the sides closely adjoining the control points, while the smallest error is found in the middle side (in the case of an odd number of sides in the theodolite line... N) or both middle lines (in the case of an even number). It follows from formula (22) that in the case of an extended equilateral theodolite line based upon 2 control points 1.) points located at the same distance from the control stations have the same transversal error, 2.) the transversal errors of the points increase in the direction from the end of the line towards the middle; the greatest error was found at the middle peak (with n (number of peaks in the line without control points) - being odd), or with the two middle peaks (if n is even). If, in a theodolite line based upon two control points all sides and angles were measured, the line can be calculated on the basis of (5) and (7) without a side measured at random being necessary.

Card 3/4

Calculation and Determination of the Accuracy of a Theodolite
Traverse Based on Two Bench Marks Where the Adjacent Angles
Were Not Measured

6-58-4-3/18

For this case (5) becomes (27), and herefrom the equation (2) is
obtained. From (7) the equation (1) is obtained in this case.
This proves the correctness of the statement made above. There
are 2 figures.

AVAILABLE: Library of Congress

1. Theodolites--Calibration--Theory

Card 4/4

3(4)

AUTHOR:

Akulov, V. I., Senior Teacher

SOV/154-58-5-9/18

TITLE:

Calculation of a Traverse Between Two Stations Under the Condition of Minimum Orientation Error (Vychisleniye teodolitnogo khoda, zamknutogo na dva tverdykh punkta, s usloviyem minimal'noy oshibki oriyentirovaniya)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1958, Nr 5, pp 83 - 105 (USSR)

ABSTRACT:

This is the presentation of a method of calculating and estimating the accuracy of a traverse between two stations. The general method of calculation is exposed first. The accuracy of orienting in a traverse between two stations is then investigated, formula (46) and (46a) being derived. (46a) was determined for the first time by Professor I. M. Bakhurin (Ref 1). Formula (46) is recommended in the paper cited by reference 1. The accuracy of centering a traverse between two stations is then investigated and the method of calculation of such a traverse under the condition of minimum orientation error is described. By

Card 1/2

Calculation of a Traverse Between Two Stations Under the SOV/154-58-5-9/18
Condition of Minimum Orientation Error

this method the accuracy of orienting of the initial traverse line is increased by $\sigma(\%)$, which is computed according to formula (88) or (88a). Formula (89) specifies the maximum attainable increase of orienting accuracy in the calculation of a traverse between two stations under the condition of a minimum orientation error. Finally a sample problem is calculated. There are 3 figures, 13 tables and 3 Soviet references.

ASSOCIATION: Tomskiy politekhnicheskiy institut im. S. M. Kirova (Tomsk Polytechnical Institute imeni S. M. Kirov)

SUBMITTED: December 10, 1957

Card 2/2

AKULOV, V.I.

General method of calculating and evaluating the accuracy of
orientations through two vertical mine shafts. Izv.TPI
93:158-170 '58. (MIRA 13:5)
(Mine surveying)

AKULOV, V.I.

Equating the system of connecting underground namways in the
orientation through three and more vertical mine shafts. Izv.
TPI 93:171-183 '58. (MIRA 13:5)
(Mine surveying)

AKULOV, V.I.

Method of calculating orientation through two vertical mine
shafts with minimum error in underground surveys.. Izv.TPI
93:184-190 '58. (MIRA 13:5)
(Mine surveying)

AKULOV, V. I., Candidate Tech Sci (diss) -- "The computation and adjustment of a connecting survey through two or more vertical mine shafts". Tomsk, 1959. 17 pp (Min Higher Educ USSR, Tomsk Polytech Inst im S. M. Kirov), 150 copies (KL, No 23, 1959, 164)

AKULOV, V.I., starshiy prepodavatel'

Calculating the distance between plumb lines by adjoining
connective triangles. Izv.vys.ucheb.sav.; gor.zhur. no.5:31-36
'59. (MIRA 13:5)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskii
institut imeni S.M.Kirova. Rekomendovana seminarom kafedr
marksheyderskogo dela i geodezii..
(Mine surveying)

AKULOV, V.I.

Calculations for orientation through two vertical shafts. Ugol'
34 no.12:32-34 D '59. (MIRA 13:4)
(Mine surveying)

AKULOV, V.I., starshiy prepodavatel'

Error of bordering on two mine plumb bobs by the method of a
connecting quadrangle. Izv.vys.ucheb.zav.; gor.shur. no.1:
42-62 '60. (MIRA 13:6)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskii
institut imeni S.M.Kirova. Rekomendovana seminarom kafedr
marksheyderskogo dela i geodezii.
(Mine surveying)

AKULOV, V.I., dotsent

Criteria for using simplified adjustment in traversing. Izv.
vys. ucheb. zav.; gor. zhur. no.6:49-56 '61.

(MIRA 16:7)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskoy
institut imeni Kirova. Rekomendovana kafedroy marksheyderskogo
dela.

(Traverses(Surveying))

AKULOV, V.I., dotsent

Errors of adjoining to a line of mine plumb bobs by an
elongated connecting triangle. Izv. vys. ucheb. zav.; gor.
zhur. 6 no. 12:59-67 '63. (MIRA 17:5)

1. Tomskiy politekhnicheskii institut imeni S.M.Kirova.
Rekomendovana kafedroy marksheyderskogo dela.

LEVI, S.M.; AKULOV, V.I.

Studying the kinetic wetting in the coating with photographic emulsions. Zhur.nauch. i prikl.fot. i kin. 9 no.2:124-126
Mr-Ap '64. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI).

AKULOV, V.I.

Adjusting an underground connection polygon in orientation
through two vertical mine shafts. Izv. TPI 118:3-18 '63.
(MIRA 18:9)

AKULOV, V.I., dotsent

Evaluating the accuracy of linear measurements in the adjustment of traverses. Izv. vys. ucheb. zav.; geod. i aerof. no. 5:12-18 '64.
(MIRA 18:5)

1. Kemerovskiy gornyy institut. Rekomendovana kafedroy marksheyderskogo dela.

S/081/62/000/003/086/090
B162/B101

AUTHORS: Akulov, V. L., Zelenev, Yu. V., Novikova, N. M.

TITLE: On the problem of the investigation of the visco-elastic properties of high polymers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1962, 599, abstract 3P294 (Izv. vyssh. uchebn. zavedeniy. Tekhnol. legk. prom-sti, no. 2, 1961, 154 - 159)

TEXT: Discussion on the article by M. D. Nusinov, A. A. Pozin, M. M. Maizel'. (cf. RZhKhim, 1961, 5P321). [Abstracter's note: Complete translation.] ✓

Card 1/1

MOSHKEVICH, Ye.I.; PORADA, A.N.; AKULOV, V.P.

Electromagnetic agitation in making stainless steel in electric furnaces.
Metallurg 8 no.4:22-24 Ap '63. (MIRA 16:3)
(Steel, Stainless—Electrometallurgy) (Electromagnets)

S/130/63/000/004/003/004

A006/A101

AUTHORS: Moshkevich, Ye. I., Porada, A. N., Akulov, V. P.

TITLE: Electromagnetic stirring in melting stainless steel in electric furnaces

PERIODICAL: Metallurg, no. 4, 1963, 22 - 24

TEXT: Experimental tests have been carried out from 1956 - 1960 with two stators for electromagnetic stirring in steelmelting. The use of these stators proved efficient by intensifying the melting process and improving the quality of the metal. Desulfurization and deoxidation processes were accelerated, slag removal time was reduced by 5 - 7 min, and the chemical composition of the metal produced, approached the theoretical values. The Cr content in the finished steel was corrected to amounts not over 17.5%; this secures considerable savings in ferro-chromium and nickel. As a result the refining time is reduced by 30 - 40 min, and metal rejects decrease by a factor of 2 - 3. The stator can be switched into two positions, namely, "stirring of the pool" and "removal of slag". It was found that the stator operated less efficient in the former position.

Card 1/2

S/130/63/000/004/003/004
A006/A101

Electromagnetic stirring in melting...

The highest speed of metal motion on the pool surface (0.3 - 0.5 m/sec) was observed at a frequency as high as 0.5 - 0.55 cycles and 1,900 - 2,000 amps current strength. There are 2 figures.

Card 2/2

NIKITIN, B.M.; SMOLYAKOV, V.F.; MALINOVSKIY, Ye.I.; AKULOV, V.P.

Improving the quality of stainless steel ingot surfaces made
by electric slag remelting. Met. i gornorud. prom. no.3:31-32
My-Je '65. (MIRA 18:11)

L 40903-66

EWP(k)/EWT(m)/T/EWP(w)/EWP(t)/ETI IJP(c) JH/JD

ACC NR: AP6018223

(N)

SOURCE CODE: UR/0383/66/000/001/0025/0027

AUTHOR: Zabaluyev, Yu. I.; Nikitin, B. M.; Yakovlev, N. F.; Kaganovskiy, G. P.;
Akulov, V. P.; Zabaluyev, I. P.

43
B

ORG: none

TITLE: Improving the quality of 30KhGSNASH electroslag remelted steel

SOURCE: Metallurgicheskaya i gornorudnaya promyshlennost', no. 1, 1966, 25-27

TOPIC TAGS: chromium steel, ^{solid} mechanical property, steel microstructure

ABSTRACT: The authors investigate electroslag remelting to eliminate hairline cracks and structural discontinuities occurring in 30KhGSNASH steel after standard smelting produced lengthwise cracks and low values for area cross section reduction in ingots (using slag ANF-6) and in rolled billets (using slag AN-291). Experiments to determine the effects of heat treatment, cooling technology, and final deoxidant admixture indicate that the killing technique is primarily responsible for the occurrence of structural defects. Elimination of the latter and improved mechanical properties were attained by limiting the amount of Al added to the basic metal as final deoxidant. Orig. art. has: 2 tables and 1 figure.

SUB CODE: 11,13/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

UDC: 669.141.247.004.12

Card 1/1

AKULOV, V. V.

USSR/Hydrology
Limnology

May/Jun 48

"Some Observations on the State of Lake Sarz in 1946," V. V. Akulov, 13 pp

"Iz v-s Geog Obshch" Vol LXX, No 3

Lake (map reproduced) was formed in 1911 due to causeway resulting from avalanche. Named after engulfed village, lat 38° 00' - 38° 20' N, long 72° 30' - 73° 15' E. Akulov visited lake in 1946. Greatest depth is 505 meters. Fed by numerous watercourses, most of which dry up in summer and fall. Describes lake in detail; tables show

5/49T59

USSR/Hydrology (Contd)

May/Jun 48

temperatures and transparencies. Gives sectional elevation of causeway; if it bursts, effect on villages below will be catastrophic (1,000,000,000 cubic meters of water).

5/49T59

AKULOV, V.V.

Kara-Kalpak Steppe in central Fergana. Izv.Uz.fil. Geog.ob-va
1:105-114 '55. (MIRA 10:3)
(Fergana---Steppes)

AKULOV, V.V.

Some characteristics of the Amu Darya Delta. Izv.Uzb.fil.geog.
ob-va no.3:133-135 '57. (MIRA 11:4)
(Amu Darya Delta)

AKULOV, V.V., kand.geogr.nauk; BABUSHKIN, L.N., doktor geogr.nauk;
 ORESHINA, L.M.; SKVORTSOV, Yu.A., doktor geol.-mineral.nauk;
 PETROV, N.P., kand.geol.-mineral.nauk; CHERNEVSKIY, N.N.;
 KRYLOV, M.M., doktor geol.-mineral.nauk; KHASANOV, A.S.;
 BEDER, B.A., kand.geol.-mineral.nauk; KIMBERG, N.V., kand.
 sel'skokhoz.nauk; SUCHKOV, S.P.; GLAGOLEVA, A.F.; PERVU-
 SHINA-GROSHEVA, A.N.; VERNIK, R.S., kand.biol.nauk; MOMOTOV,
 I.F.; GRANITOV, I.I., kand.biol.nauk; SALIKHBAYEV, Kh.S., kand.
 biolog.nauk; STEPANOVA, N.A., kand.biolog.nauk; YAKHONTOV, V.V.;
 DAVLETSHINA, A.G., kand.biolog.nauk; MURATBEKOV, Ya.M., kand.
 biolog.nauk; [deceased]; KUKLINA, T.Ye.; KORZHENEVSKIY, N.L., red.
 [deceased]; GORBUNOV, B.V., kand.geologo-mineral.nauk, red.;
 DONSKOY, P.V., red.; YAKOVENKO, Ye.P., red.izd-va; GOR'KOVAYA,
 Z.P., tekhn.red.

[Materials on the productive forces of Uzbekistan] Materialy po
 proizvoditel'nykh silam Uzbekistana. Tashkent. No.10. [Natural
 conditions and resources of the lower reaches of Amu-Darya;
 Kara-Kalpak A.S.S.R. and Khorezm Province of the Uzbek S.S.R.]
 Prirodnye usloviia i resursy nizov'ev Amu-Dar'i; Kara-Kalpakskaya
 ASSR i Khorezmskaya oblast' UzSSR. 1959. 351 p. (MIRA 13:5)

1. Akademiya nauk Uzbekskoy SSR, Tashkent. Sovet po izucheniyu
 proizvoditel'nykh sil. 2. Chleny-korrespondenty AN UzSSR (for
 Yakhontov, Korzhenevskiy).
 (Amu-Darya Valley--Physical geography)

AKULOV, V.V.

Amu Darya delta sedimentations. Izv.Uzb.fil.Geog.ob-va 4:35-50
'60. (MIRA 13:7)
(Amu Darya Valley--Sediments (Geology))

AKULOV, V.V.

Principle of the geomorphological regionalization of the Amu
Darya Delta. Izv.Uzh.fil.Geog.ob-va 6:70-80 '62. (MIRA 15:8)
(Amu Darya Delta—Geomorphology)

KORZHENEVSKIY, N.L.; DONTSOVA, Z.N.; KHASANOV, Kh.Kh., dots.;
VASIL'KOVSKIY, N.P.; SKVORTSOV, Yu.A.; POSLAVSKAYA, O.Yu.;
KOGAY, N.A., dots.; MAMEDOV, E.D.; AKHLOV, V.V.; BABUSHKIN,
L.N., prof.; SHUL'TS, V.L., prof.; GORBUNOV, B.V.; GRANITOV,
I.I.; KOSTIN, V.P.; SMIRNOV, N.V., dots.; TSAPENKO, N.G.,
dots.; DEGTYAR', V.I.; CHERNOV, P.N.; MUKMINOV, F.G.;
SELIYEVSKAYA, A.A.; RYABCHIKOV, A.M.; DALIMOV, N.D., dots.;
LOBACH, Kh.S.; TADZHIMOV, T.; ARKAD'YEVA, A.N.; GAL'KOV,
Ch.V.; SHTARKLOVA, S.I.; BESSONOV, M., red.; BAKHTIYAROV, A.,
tekhn. red.

[The Uzbek S.S.R.] Uzbekskaya SSR. Tashkent, Gos.izd-vo
UzSSR, 1963. 483 p. (MIRA 16:8)
(Uzbekistan)

L 17026-66

ACC NR: AP6006327

SOURCE CODE: UR/0413/66/000/002/0050/0050

INVENTOR: Akulov, V. V.; Svin'in, M. P.

ORG: none

TITLE: Cascade voltage multiplier. Class 21, No. 177960

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 50

TOPIC TAGS: voltage multiplier

ABSTRACT: The proposed voltage multiplier utilizes parallel power supply of the stages. To obtain a high constant voltage at atmospheric pressure and to increase the use of the supply voltage amplitude, it is designed in the form of two capacitor columns with cylindrical filter and charging plates. The cylinders are mounted inside ring-shaped secondary plates and are insulated from them by a common glass-shaped

Card 1/1

UDC: 621.314.54

L 17026-66

ACC NR: AP6006327

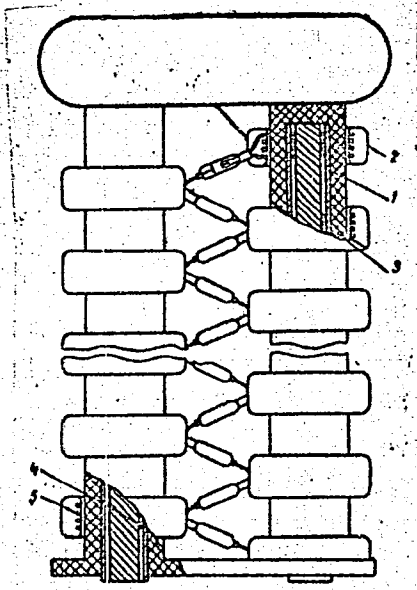


Fig. 1. Cascade voltage multiplier

1 - Common electrode of filter and charging capacitors; 2 - secondary capacitance electrodes; 3 - common insulator; 4 - primary transformer winding; 5 - secondary transformer windings.

insulator which also serves as insulation between the primary and secondary windings of the transformer supplying the kenotrons (see Fig. 1). Orig. art. has: 1 figure. [DW]

Card 2/3

17025-66

ACC NR: AP6006327

SUB CODE: 09/ SUBM DATE: 14May63/ ATD PRESS: 4207

Cord 3/3 vmb

KONDAKOV, N.P., kand.tekhn.nauk (Novosibirsk); AKULOV, V. Ye., inzh.
(Novosibirsk); OPARINA, N.A., teknik (Novosibirsk)

Performance of the R65 rails on the track. Put' i put.khoz. 5
no.2:11 F '61. (MIRA 14:3)

(Railroads—Rails)

KONDAKOV, N.P.; AKULOV, V.Ye.; OPARINA, N.A.

Life of R-65 rails in railroad tracks. Stal' 22 no.1:71-72 Ja '62.
(MIRA 14:12)

1. Novosibirskiy institut inzhenerov zheleznno-dorozhnogo
transporta.

(Railroads--Rails)

AKOL'ZIN, D.A.; AKULOV, V.Ye.

Standing watch for safety. Put' i put.khoz. 7 no.9:32-33 '63.
(MIRA 16:10)

1. Pomoshechnik dorozhnogo revizora po bezopasnosti dvizheniya,
g.Novosibirsk (for Akol'zin). 2. Starshiy revizor sluzhby
puti, g.Novosibirsk (for Akulov).

AKULOV, Ye.F.

Training industrial personnel to service automatic lines.
Prom.energ. 11 no.2:33-34 F '56. (MLRA 9:6)

1. Nachal'nik Otdela glavnogo mekhanika i glavnogo energetika
Ministerstva transportnogo mashinostroyeniya SSSR.
(Machinery, Automatic) (Electric engineering)

NAZARENKO, U.P.; AKULOV, Ye.F., red.; KIREYEV, M.I., red.; NOVIKOV, V.K., red.; SAVEL'YEV, V.I., red.; CHUMAKOV, N.M., red.; AFANAS'YEV, N.A., red.; BORUNOV, N.I., tekhn. red.

[Economy in the use of electricity in compressor plants] Ekonomiya elektroenergii v kompressornykh ustanovkakh. Moskva, Gos. energ. izd-vo, 1961. 79 p. (MIRA 14:8)

(Electric power)

TREKHOV, M.I.; GORIN, F.I., inzh.; AKULOV, Ye.F., red.; KIREYEV, M.I., red.; NOVIKOV, V.K., red.; SAVEL'YEV, V.I., red.; CHUMAKOV, N.M., red.; POPOV, I.V., red.; BORUNOV, N.I., tekhn. red.

[Efficient use of electric power in metal cutting and press working in machine manufacturing plants] Ratsional'noe ispol'zovanie elektroenergii pri obrabotke metallov rezaniem i davleniem na mashinostroitel'nykh zavodakh. Moskva, Gos. energ. izd-vo, 1961.

103 p.

(MIRA 14:10)

(Electric metal cutting) (Power presses—Electric driving)

MAKSIMOV, Aleksandr Aleksandrovich; ZAV'YALOV, V.P., red.; ~~AKULOV, Ye.F.,~~
red.; KIRBYEV, M.I., red.; NOVIKOV, V.K., red.; SABEL'YEV, V.I.,
red.; CHUMAEV, N.M., red.; BOGUNOV, N.I., tekhn.red.

[Economy in the use of electric power in industrial enterprises]
Ekonomiia elektroenergii na promyshlennykh predpriatiakh.
Moskva, Gos.energ.izd-vo, 1961. 119 p.

(MIRA 15:2)

(Electric power)

MAKSIMOV, Aleksandr Aleksandrovich; ZAV'YALOV, V.P., red.; AKULOV, Ye.F.,
red.; KIREYEV, M.I., red.; NOVIKOV, V.K., red.; SAVEL'YEV, V.I.,
red.; CHUMAKOV, N.M., red.; BARUNOV, N.I., tekhn.red.

[Saving of electric power in industrial enterprises] Ekonomia
elektroenergii na promyshlennykh predpriatiakh. Moskva,
Gos.energ.izd-vo, 1961. 119 p. (MIRA 15:2)
(Electric power)

CHUMAKOV, N.M., red.; KIREYEV, M.I., red.; AKULOV, Ye.F., red.;
IVANOV, N.N., red.; KNYAZEV, P.I., red.; CHICHILLO, I.K.,
red.; MEL'NIK, V.D., red.

[Safety engineering and operation regulations for the
maintenance of the electrical systems of industrial
enterprises; mandatory for industrial enterprises, eco-
nomic councils, ministries, and enterprises] Pravila
tekhnicheskoi ekspluatatsii i bezopasnosti obsluzhiva-
niia elektroustanovok promyshlennykh predpriatii; obia-
zatel'ny dlia promyshlennykh predpriatii sovnarkhozov,
ministerstv i vedomstv. Dnepropetrovsk, Izd-vo "Promin",
1964. 305 p. (MIRA 18:2)

1. Russia (1923- U.S.S.R.) Glavnoye energeticheskoye
upravleniye.

CHUMAKOV, N.M., red.; KIREYEV, M.I., red.; AKULOV, Ye.F., red.;
IVANOV, N.I., red.; KNYAZEV, P.I., red.; CHICHILLO, I.K.,
red.; KIREYEV, M.I., red.

[Safety engineering regulations for operating and servicing electrical systems of industrial enterprises; mandatory for industrial enterprises, economic councils, ministries, and departments] Pravila tekhnicheskoi ekspluatatsii i bezopasnosti obsluzhivaniia elektronstanovok promyshlennykh predpriatii; obiazatel'ny dlia promyshlennykh predpriatii, sov-narkhozov, ministerstv i vedomstv. Utverzhdeny 10 fevralia 1961 g. Moskva, Metallurgizdat, 1962. 360 p. (MIRA 15:10)

1. Russia (1923- U.S.S.R.) Glavnoye energeticheskoye upravleniye.
(Electric power distribution--Safety regulations)

FEDULOV, A.I.; KAMENSKIY, V.V.; SERPENINOV, B.N.; AKULOV, Ye.F.

Laboratory testing machine for studying the breaking of rocks
with an impact load. Trudy Inst. gor. dela Sib. otd. AN SSSR
no.6:63-77 '61. (MIRA 15:9)

(Rocks--Testing)

SIMKHES, A.I.; AKULOV, Ye.F.; GUDIN, L.K.; SHABANOV, B.I.

Three-channel tensiometric measuring unit. Trudy Inst. gor. dela
Sib. otd. AN SSSR no.6-91-94 '61. (MIRA 15:9)
(Mining machinery---Testing) (Tensiometers)

AKULOV, Ye.F.; KAMENSKIY, V.V.

Using the EO-7 oscillograph in recording single rapidly moving
processes. Trudy Inst. gor. dela Sib. otd. AN SSSR no.6:95-97
'61. (MIRA 15:9)
(Oscillograph) (Mining machinery--Testing)

CHUMAKOV, N.M., red.; KIREYEV, M.I., red.; AKULOV, Ye.F., red.;
IVANOV, N.N., red.; KNYAZEV, P.I., red.; CHICHILO, I.K.,
red.; KRYLOV, A.G., red.; GLUSHKO, G.I., tekhn. red.

[Safety engineering regulations for operating and servicing
electrical systems of industrial enterprises required for
the industrial plants of economic councils, ministries, and
departments] Pravila tekhnicheskoi ekspluatatsii i bezopasnosti
obslyuzhivaniia elektroustanovok promyshlennykh predpriatii;
obiazatel'ny dlia promyshlennykh predpriatii sovmarkhozov,
ministerstv i vedomstv. Utverzhdeny 10 fevralia 1961 g. Mo-
skva, Dnepropetrovskoe knizhnoe izd-vo, 1962. 279 p.

(MIRA 16:3)

1. Russia (1923- U.S.S.R.) Glavnoye energeticheskoye upravle-
niye.

(Electric power distribution--Safety regulations)

CHUMAKOV, N.M., red.; KIREYEV, M.I., red.; AKULOV, Ye.F., red.;
IVANOV, N.N., red.; KNYAZEV, P.I., red.; CHICHILLO, I.K.,
red.; MEL'NIK, V.D., red.

[Regulations for operating and safety measures in servicing
the electrical systems of industrial enterprises; mandatory
for industrial enterprises of regional economic councils,
ministries, and departments] Pravila tekhnicheskoi ekspluata-
tsii i bezopasnosti obsluzhivaniia elektroustanovok pro-
myshlennykh predpriatii; obiazatel'ny dlia promyshlennykh
predpriatii sovnarkhozov, ministerstv i vedomstv.
Dnepropetrovsk. Izd-vo "Promin'," 1965. 257 p.

(MIRA 18:8)

1. Russia (1923- U.S.S.R.) Glavnoye energeticheskoye upravle-
niye.